

FLIGHT SUMMARY REPORT

Flight Number: 97-069
Calendar/Julian Date: 20 March 1997 • 079
Sensor Package: Wild-Heerbrugg RC-10
Thematic Mapper Simulator (TMS)
Area(s) Covered: Monterey Bay, California

Investigator(s): Functional Sensor Flight

Aircraft #: 706

SENSOR DATA

Accession #:	05169	-----
Sensor ID #:	026	074
Sensor Type:	RC-10	TMS
Focal Length:	12" 304.97 mm	-----
Film Type:	Aerochrome MS 2448	-----
Filtration:	HF3	-----
Spectral Band:	420-700 nm	-----
f Stop:	11	-----
Shutter Speed:	1/250	-----
# of Frames:	6	-----
% Overlap:	60	-----
Quality:	Excellent	-----
Remarks:	Processing marks throughout	

Airborne Science and Applications Program

The Airborne Science and Applications Program (ASAP) is supported by three ER-2 high altitude Earth Resources Survey aircraft. These aircraft are operated by the High Altitude Missions Branch at NASA-Ames Research Center, Moffett Field, California. The ER-2s are used as readily deployable high altitude sensor platforms to collect remote sensing and *in situ* data on earth resources, celestial phenomena, atmospheric dynamics, and oceanic processes. Additionally, these aircraft are used for electronic sensor research and development and satellite investigative support.

The ER-2s are flown from various deployment sites in support of scientific research sponsored by NASA and other federal, state, university, and industry investigators. Data are collected from deployment sites in Kansas, Texas, Virginia, Florida, and Alaska. Cooperative international scientific projects have deployed the aircraft to sites in Great Britain, Australia, Chile, and Norway.

Photographic and digital imaging sensors are flown aboard the ER-2s in support of research objectives defined by the sponsoring investigators. High resolution mapping cameras and digital multispectral imaging sensors are utilized in a variety of configurations in the ER-2s' four pressurized experiment compartments. The following provides a description of the digital multispectral sensor(s) and camera(s) used for data collection during this flight.

Thematic Mapper Simulator

The Daedalus Thematic Mapper Simulator (TMS) is a multispectral scanner flown aboard the ER-2 aircraft which simulates spatial and spectral characteristics of the seven Landsat-D Thematic Mapper bands. The specific bands are as follows:

<u>Daedalus Channel</u>	<u>TM Band</u>	<u>Wavelength, <i>mm</i></u>
1	A	0.42 - 0.45
2	1	0.45 - 0.52
3	2	0.52 - 0.60
4	B	0.60 - 0.62
5	3	0.63 - 0.69
6	C	0.69 - 0.75
7	4	0.76 - 0.90
8	D	0.91 - 1.05
9	5	1.55 - 1.75
10	7	2.08 - 2.35
11	6	8.5 - 14.0 low gain
12	6	8.5 - 14.0 high gain

Sensor/aircraft parameters are as follows:

IFOV:	1.25 mrad
Ground Resolution:	81 feet (25 meters) at 65,000 feet
Total Scan Angle:	43°
Swath Width:	8.4 nmi (15.6 km) at 65,000 feet
Pixels/Scan Line:	716
Scan Rate:	12.5 scans/second
Ground Speed:	400 kts (206 m/second)

Camera Systems

Various camera systems and films are used for photographic data collection. Film types include high definition color infrared, natural color, and black and white emulsions. Available photographic systems are as follows:

- Wild-Heerbrugg RC-10 metric mapping camera
 - 9 x 9 inch film format
 - 6 inch focal length lens provides area coverage of 16 x 16 nautical miles from 65,000 feet
 - 12 inch focal length lens provides area coverage of 8 x 8 nautical miles from 65,000 feet
- Hycon HR-732 large scale mapping camera
 - 9 x 18 inch film format
 - 24 inch focal length lens provides area coverage of 4 x 8 nautical miles from 65,000 feet
- IRIS II Panoramic camera
 - 4.5 x 34.7 inch film format
 - 24 inch focal length lens
 - 90 degree field of view provides area coverage of 2 x 21.4 nautical miles from 65,000 feet

The U.S. Geological Survey's EROS Data Center at Sioux Falls, South Dakota serves as the archive and product distribution facility for NASA-Ames aircraft acquired photographic and digital imagery. For information regarding photography and digital data (including areas of coverage, products, and product costs) contact EROS Data Center, Customer Services, Sioux Falls, South Dakota 57198 (Telephone: 605-594-6151).

Information regarding ER-2 acquired photographic and digital data is available through the Aircraft Data Facility at Ames Research Center. For specific information regarding flight documentation, sensor parameters, and areas of coverage contact the Aircraft Data Facility, NASA-Ames Research Center, Mail Stop 240-6, Moffett Field, California 94035-1000 (Telephone: 650-604-6252).

CAMERA FLIGHT LINE DATA

FLIGHT NO. 97-069

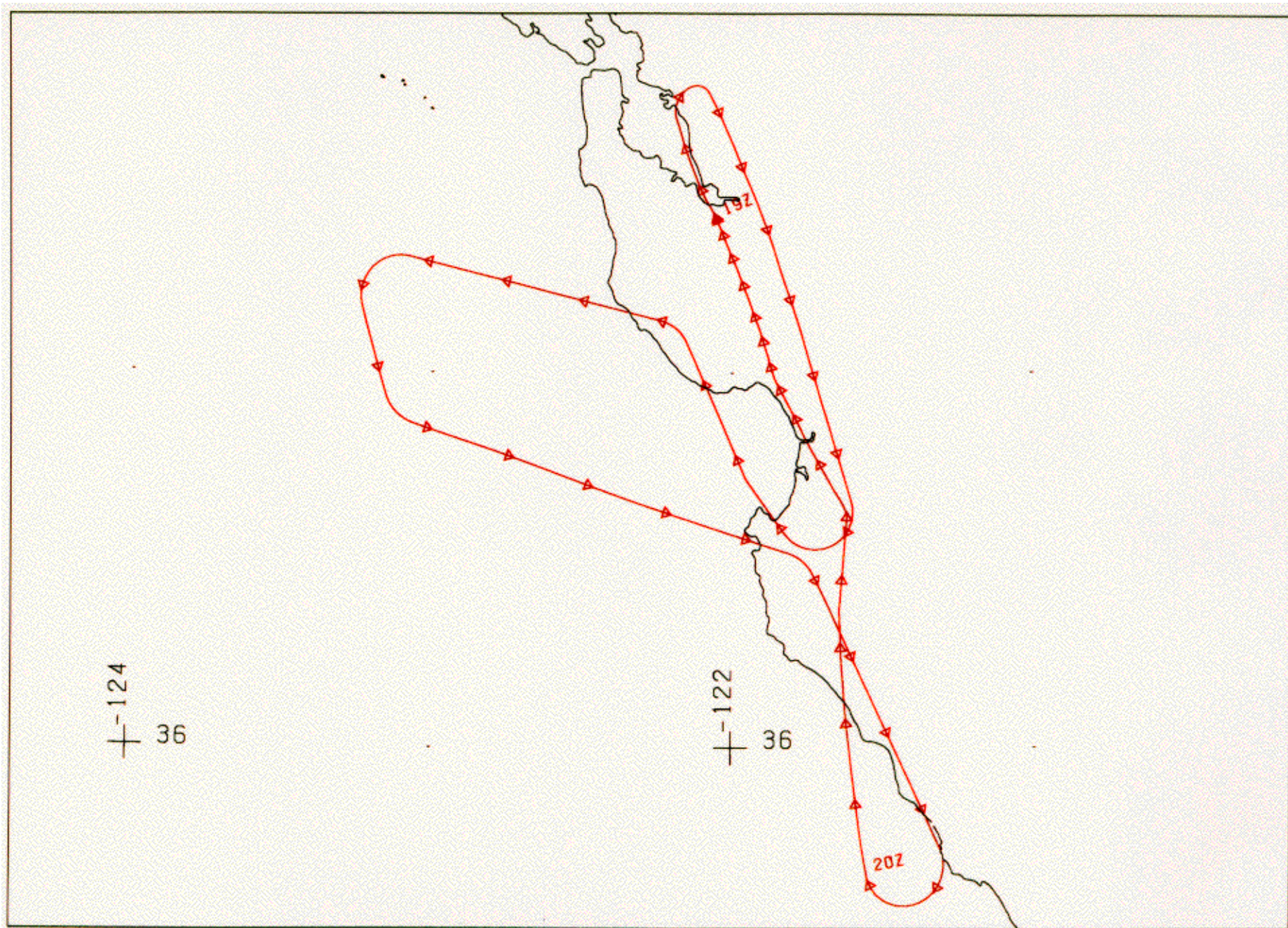
Accession # 05169

Sensor # 026

Check Points	Frame Numbers	Time (GMT-hr, min, sec)		Altitude, MSL feet/meters	Cloud Cover/Remarks
		START	END		
A - B	3930-3932	19:22:16	19:23:13	62000/18898	Haze and thin cirrus
C - D	3933-3935	19:25:48	19:26:45	65000/19812	Haze and thin cirrus

DAEDALUS FLIGHT DATA
FLIGHT NUMBER: 97-069

Check Points	A c t u a l t i m e b e g i n e n d		A c t u a l s c a n l i n e b e g i n e n d		Altitude feet/meter	Scan Speed (rps)	total G o o d scanlines	total Interpolated scanlines	total Repeated scanlines
B	19:21:59	19:23:03	23513	24313	62000/18902	12.5	801	0	0
C-D	19:24:07	19:27:03	25113	27313	65000/19812	12.5	2201	0	0
E-F	19:28:23	19:34:15	28313	32713	68000/20731	12.5	4401	0	0
G-H	19:36:55	19:38:15	34713	35713	69000/21036	12.5	1001	0	0
I-J	19:40:07	19:48:42	37113	43543	70000/21341	12.5	6401	0	30
K-L	19:50:02	19:56:28	44543	49373	70000/21341	12.5	4801	0	30



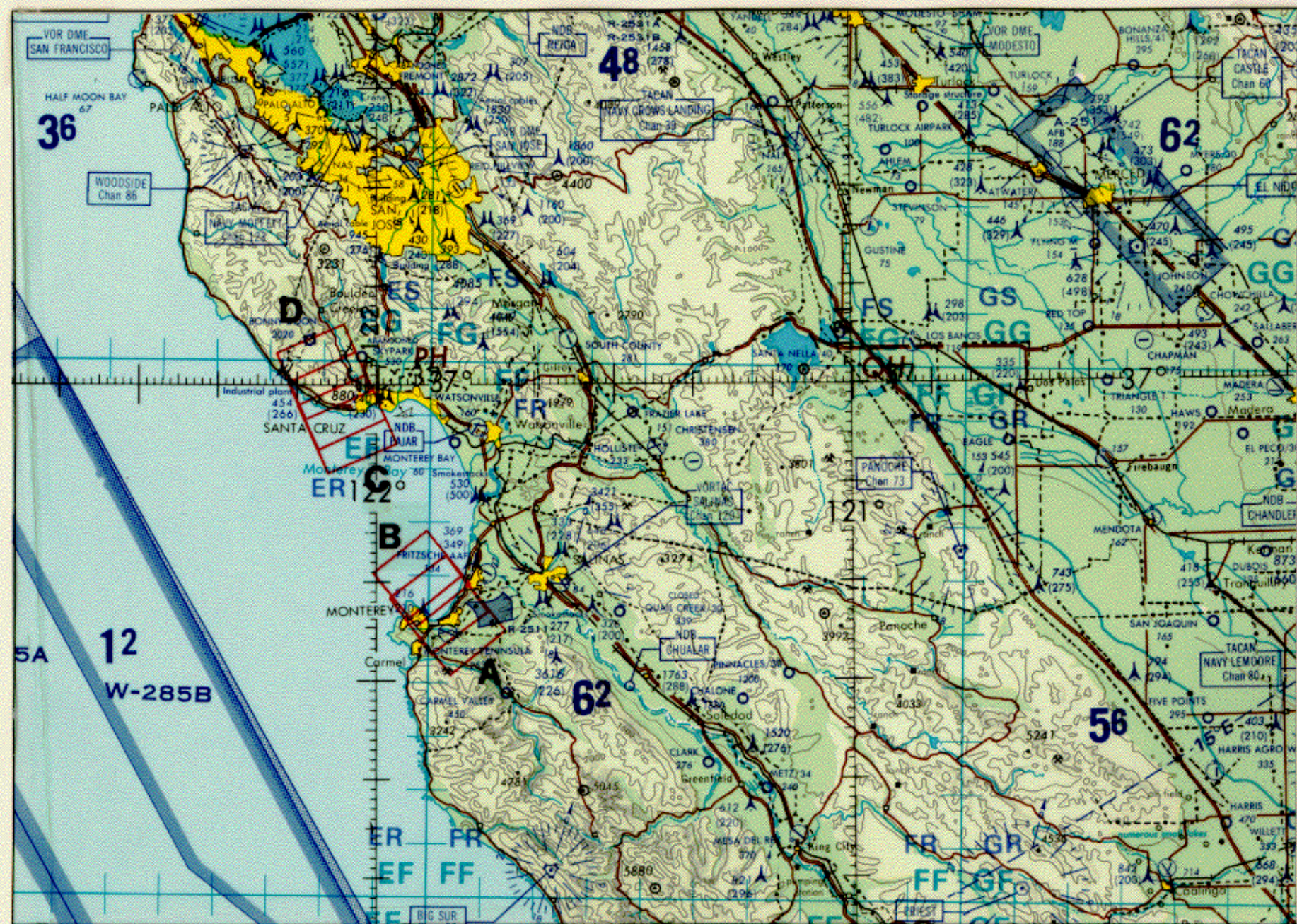
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RC-10 / TMS

F.C.F



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ONC G-18



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